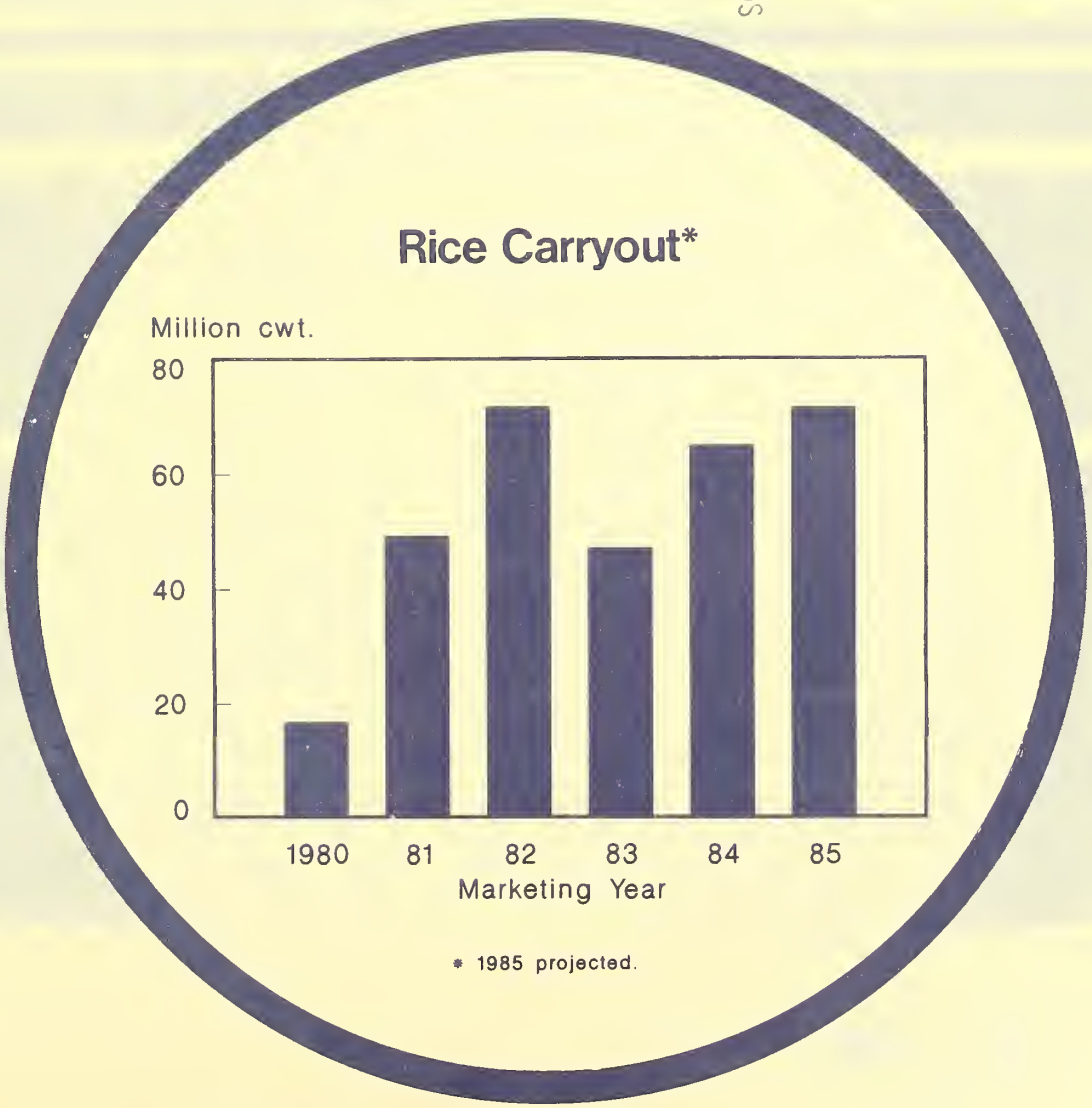
United States
Department of
Agriculture

Economic
Research
Service

RS-46
September 1985

Rice

Outlook and Situation Report



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Approved by the World Agricultural Outlook Board. Summary released September 17, 1985. The next summary of the *Rice Outlook and Situation* is scheduled for release on March 17, 1986.

The *Rice Outlook and Situation* is published in March and September. Annual subscription: $11 U.S., $13.75 foreign. Order from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Make checks payable to the Superintendent of Documents.

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SUMMARY

Heavy participation in the 1985 rice program led producers to substantially reduce acreage for 1985/86. As a result, the 1985 rice harvest is expected to fall 8 percent from last year to 126 million cwt. While harvested area is estimated at a reduced 2.45 million acres, national average yields will likely reach a record 5,148 pounds per acre. Yields have increased in response to larger plantings of higher-yielding varieties, removal of less productive land from production, and excellent weather.

The 1985/86 season began with a carryin of 65 million cwt. Total rice supplies, including imports, are estimated at 193 million cwt, about 7 million more than 1984/85. Long grain rice is expected to comprise close to 70 percent of this season's supply, compared with 62 percent a year ago and 53 percent 2 years ago. Long grain output has increased because of a support price that favors long grain production, improvements in long grain varieties, and the lack of commercial medium grain export markets.

Continued weak demand will cause rice stocks to build further in 1985/86. Domestic use is forecast at 54 million cwt, and exports at 59 million, compared with 52 and 61 million, respectively, a year earlier. With no growth expected in total use, ending stocks next July 31 are estimated at 74 million cwt, up 14 percent from a year earlier. Long grain stocks may comprise 73 percent of the 1985/86 carryout, up from 35 percent just 2 years ago.

Season average farm prices are forecast in a range of $7.80 to $8.80 a cwt. With long grain prices currently below the loan, large forfeitures to the Commodity Credit Corporation (CCC) are expected. On August 1, 1986, CCC inventory is forecast to approach 58 million cwt, compared with 44 million in 1985 and 25 million in 1984.

The global rice outlook for 1985/86 also features large supplies, limited import demand, and falling prices. World production is forecast at 316 million tons (458 rough basis), down 2 million from last year's record. No major importers or exporters are anticipated to incur significant shortfalls. Record crops are expected in India, Indonesia, and Bangladesh, the world's second, third, and fourth largest producers. The increased use of high-yielding varieties, especially those resistant to pests and diseases, and the expanded application of fertilizers and chemicals have boosted yields in these and many rice-producing nations.

Global rice trade in calendar 1985 is expected to decline to 11.6 million tons, down 9 percent from a year earlier. Weaker world demand for rice is hurting prospects of all major exporters.

U.S. rice exports during the first half of 1985 totaled 889,430 tons (milled basis), down 16 percent from a year earlier. Sales declined to many important commercial customers, as exporters found it increasingly difficult to compete with lower-priced Thai rice. Even though many international customers prefer the quality of U.S. rice, the wide difference in price continues to hamper U.S. commercial sales.

This issue of the Rice Outlook and Situation report discusses the provisions offered for rice in the various 1985 farm bill proposals, and assesses the impact of current provisions on the rice outlook. Also included is a special article on the potential impact of California long grain rice production on U.S. milled rice flow patterns.

Heavy Participation in 1985 Rice Program Leads to Substantial Reduction in Acreage

Rice producers enrolled 92 percent of their base acreage in the 1985 rice program, compared with 87 percent in 1984 and 98 percent in 1983. Participants were required to comply with a 20-percent acreage reduction and a 15-percent cash land diversion this year to be eligible for price and income support benefits of an $8-per-cwt loan rate, an $11.90-target price, and a diversion payment rate of $3.50. These program benefits, combined with an outlook for weak market prices, are responsible for the high rate of participation in the rice program.

An estimated 2.45 million acres of rice are being harvested for 1985/86, down more than 1.3 million acres from the 1981 record crop and only about 0.3 million above harvested area in 1983--the year of the payment-in-kind (PIK) program.

Yields are expected to set a record this year. Increased plantings of the new higher-yielding varieties of rice, removal of less productive land from production, and excellent weather will likely push yields to about 5,148 pounds per acre. An estimated 60 percent of rice acreage is planted to the higher-yielding varieties. Texas, Louisiana, and Mississippi may have the highest increases in overall yield with 11 percent, 10 percent, and 10 percent, respectively, compared with a national average increase of 4.5 percent.

Despite the increase in yields, the substantial acreage reduction will lower U.S. rice production 8 percent from a year ago to around 126 million cwt. Long grain rice will make up about 74 percent of the total, medium grain 22 percent, and short grain 4 percent. In just 2 years, long grain production has increased by over 40 percent while short grain production has dropped by over 40 percent and medium grain production remained about the same. The main reasons for this shift toward more long grain production are greater adoption of the higher-yielding varieties of long grain rice and loan rates which favor long grain production.

Stocks Continue To Build

As the 1985/86 marketing year gets underway, the rice market is weighed down by burdensome carryin stocks of about 65 million cwt. With projected use expected to reach only 119 million cwt, stocks alone could satisfy over 50 percent of projected use. When the marketing year ends next July 31, stocks are likely to stand at close to 74 million cwt, or about 62 percent of projected use.

Why have stocks risen to such levels? Rice stocks started building in 1981/82 when record acreage and excellent yields produced a record- shattering crop.

In response to growing foreign demand and a relatively tight supply, rice prices had been climbing during the late 1970's and reached $12.80 a cwt by 1980/81. Also, producers found returns for alternative crops to be relatively low and rice was considered a less risky crop since it is 100-percent irrigated.

However, at the same time that the rice supply was peaking, foreign consumption of U.S. rice began to level off and decline. In 1981/82, demand for U.S. rice began a steady downward trend. Between 1980/81 and 1984/85, exports fell by 30 million cwt, while domestic food use and brewers' use began to level off.

Thus, stocks began to build until the 1983/84 PIK program reduced them by 35 percent. The PIK program, however, was a supply-control measure only. In fact, PIK helped raise market prices as demand was declining. After PIK, a continued erosion in demand that was not matched by an equal or greater decline in production, allowed stocks to build once again. In 1985/86, rice production is expected to exceed use by only 7 million cwt, but carryin stocks of 65 million cwt will push supplies to almost 193 million.

The growth in rice stocks has had a dampening effect on prices. For the five seasons prior to 1981/82, when the build-up in stocks began, the total stocks-to-use ratio averaged 23 percent and farm prices averaged 146 percent of the loan rate. During 1981/82-1984/85, the stocks-to-use ratio averaged 45 percent, and farm prices averaged only 106 percent of the loan rate. The midpoint of the forecast price range for

Table 1.--Estimated supply and disappearance by type of rice, U.S.

Item	Unit	1983/84	1984/85	1985/86 4/
Total rice				
Area harvested	Mil. acres	2.117	2.780	2.45
Yield	Pounds	4,598	4,926	5,148
Beginning stocks 1/	Mil. cwt	71.5	46.9	64.7
Production	"	99.7	137.0	126.1
Total supply 2/	"	171.9	185.0	192.8
Domestic use	"	49.1	52.3	54.0
Exports	"	70.3	61.0	59.0
Residual	"	5.6	7.4	6.0
Total use	"	125.0	120.7	119.0
Ending stocks 1/	"	46.9	64.7	73.8
CCC	"	25.0	44.3	57.8
Free	"	21.9	20.4	16.0
Season average price	Dol./cwt	8.76	8.25	7.80-8.80
Long				
Area harvested	Mil. acres	1.54	2.12	1.92
Yield	Pounds	4,168	4,586	4,875
Beginning stocks 1/	Mil. cwt	25.8	16.4	37.7
Production	"	64.3	97.4	93.6
Total supply 2/	"	90.7	115.1	133.1
Domestic use 3/	"	29.5	36.1	37.0
Exports	"	44.8	41.3	42.0
Total use	"	74.3	77.4	79.0
Ending stocks 1/	"	25.8	37.7	54.1
Season average price	Dol./cwt	9.00	8.80	8.25-9.25
Medium/short				
Area harvested	Mil. acres	.63	.66	.53
Yield	Pounds	5,655	6,019	6,132
Beginning stocks 1/	Mil. cwt	44.7	28.8	25.7
Production	"	35.4	39.7	32.5
Total supply 2/	"	80.2	68.7	58.4
Domestic use 3/	"	26.0	23.3	23.0
Exports	"	25.4	19.7	17.0
Total use	"	51.4	43.0	40.0
Ending stocks 1/	"	28.8	25.7	18.4
Season average price	Dol./cwt	7.50	7.00	7.00-8.00

Numbers may not add due to rounding. 1/ Stocks of total rice include broken kernels, which are not included in the breakdowns of rice by type. Thus, the sum of long and medium/short grain rice carryover will not add to the total carryover; the difference is stocks of brokens. 2/ Supply includes imports. 3/ Domestic use includes residuals. 4/ Projected.

1985/86, $7.80 to $8.80 a cwt, is less than 104 percent of the loan rate, and the stocks-to-use ratio is expected to be 62 percent.

Low market prices will result in more rice being forfeited to the Commodity Credit Corporation (CCC). The CCC inventory on August 1, 1986, is forecast at nearly 58 million cwt, compared with 44 million in 1985 and 25 million in 1984.

In the past few years, long grain rice stocks have grown while medium and short grain stocks have fallen. Long grain stocks will likely make up around 73 percent of the 1985/86 carryout, up from 35 percent just 2 years ago. Markets for long grain rice have not developed as fast as production has increased. Farm prices for long grain rice in 1985/86 are forecast to range from $8.25 to $9.25 a cwt, while medium and short grain prices are projected to range from $7.00 to $8.00.

RECAPPING 1984/85

Large supplies and weak demand caused rice stocks to build in 1984/85 by 38 percent. As a result, the farm price fell to $8.25 a cwt. Deficiency payments of $375 million

were made based on a payment rate of $3.76 a cwt--$11.90-target price minus the 5-month farm price average of $8.14.

Rice producers harvested 2.78 million acres in 1984 for a crop of 137 million cwt. A carryin of 47 million cwt, plus imports of 1.5 million, brought total supplies to 185 million. With total use at 121 million cwt, supply exceeded use by almost 65 million.

Erosion of export markets for U.S. rice, coupled with steady domestic demand, continued to keep rice use on a steady downward trend. Lower seed use and slower growth in brewers' demand were mainly responsible for the moderation in domestic use. U.S. exports were hampered by the widening price gap between Thai and U.S. rice, a strong dollar, and relatively high U.S. loan rates.

1985 FARM BILL

Before convening for summer recess, both the House and Senate Agriculture Committees approved provisions for farm programs to replace the legislation that expires this year. This issue of the Rice Outlook and Situation takes a look at the provisions offered for rice.

Target Prices

The 1985/86 target price of $11.90 per cwt is the minimum legislated by Congress in 1984. The Secretary of Agriculture has limited discretion to alter the target on the upside. The *Administration* proposed in the Agricultural Adjustment Act of 1985 that the target price be based on a declining percentage of a moving average of previous farm prices: the percentage would begin at 100 in 1986, and then decline 5 points annually until 1991, when the target price would be 75 percent of the moving average.

The *House* committee bill, H.R. 2100, would freeze the 1986 and 1987 target prices at the current $11.90-level. Beginning in 1988, the target price would be set at not less than 90 percent of the most recent 3-year average of total economic costs of production. However, the target price also could not be lowered more than 5 percent from the previous year. In addition, the target price could only be lowered if the average cost of rice production fell 5 percent from the previous year. If costs are measured on a per acre basis, this provision effectively freezes target prices at $11.90.

The *Senate* committee proposed that the 1986 and 1987 target prices be set at not less than $11.12 a cwt. Beginning in 1988, the target price would be computed as 110 to 125 percent of the most recent 5-year average of market prices, excluding the highest and lowest prices during those years. The Senate restricted the maximum decline in any 1 year to 5 percent, but unlike the House, did not provide any cost of production test.

Loan Rates

The 1985 loan rate is $8 per cwt, the minimum allowed under current law. The *Administration* proposed for 1986-91 crops that loan rates be computed as 75 percent of the same moving average farm price used to compute target prices. Note that the Administration's proposal would effectively eliminate the deficiency payment provision by 1991, because the target price and loan rate would be equal.

The *House* committee proposed that loan rates be calculated as 85 percent of the most recent 3-year average of market prices. However, the House restricted downward movement of the loan to a maximum of 5 percent, unless the calculated loan could be shown to seriously hamper exports or result in excessive stocks. In that event, the calculated loan could be reduced another 20 percent. Furthermore, if the loan were reduced more than 5 percent, any deficiency payments that result from the additional decline in the loan rate would not be subject to the payment limit. In addition, the House provides for a 10-month anniversary loan. Currently, loans are available through March 31 and payable April 30 the following year.

The House committee also directs the Secretary to issue export certificates redeemable for CCC inventory of rice or other commodities. The certificates would be valued at the difference between the loan rate and the world price of rice. These certificates would be issued to rice buyers or exporters.

The *Senate* Committee approved a minimum $7.20-per-cwt loan rate for 1986.

Beginning in 1987, the loan rate would be the higher of: a) $6.50 a cwt, or b) 85 percent of the most recent 5-year average of market prices, excluding the highest and lowest prices. However, the loan could not drop by more than 5 percent from the previous year. The Secretary is directed to permit the loan to be repaid at the smaller of the following: a) the loan rate established for the current crop, or b) the higher of 70 percent of this established loan or the prevailing world market price.

Acreage Reductions

Current legislation includes a provision that relates the percentage of the needed acreage reduction (ARP) and paid diversion (PLD), and the diversion payment rate to stock levels. The 1985 program calls for a 20-percent ARP and a 15-percent PLD. Because carryin stocks exceeded 42.5 million cwt, the diversion payment rate was set at $3.50 per cwt. The *Administration* proposed diminished use of ARP's in the 1985 farm bill, beginning with a 15-percent ARP in 1986, and ending with a 5-percent ARP in 1988.

The *House* committee included authority for continued use of ARP's and PLD's. As with current legislation, a trigger level of carryover stocks was incorporated. If ending stocks are projected to exceed 20 percent of estimated domestic use and exports, an ARP must be implemented, but it must not exceed 25 percent. If the ARP is insufficient, a PIK diversion up to 25 percent may be used. If CCC stocks for the PIK diversion are insufficient, cash payments must be substituted. And, for rice and cotton producers, the House authorized a separate $50,000 limit for diversion payments.

The *Senate* committee also continued authority for acreage reductions, and cash diversions, and set the maximum ARP level at 35 percent. However, the Senate included provisions that effectively encourage and pay both participating and nonparticipating producers to underplant. For example, if a producer outside the program reduces planted acres from his acreage base by half of the required reduction, a payment-in-kind of CCC-owned rice may be made. Another provision allows participants to collect deficiency payments on their full permitted planted acreage, provided that at least one-half of the permitted acreage is planted.

Both the House and Senate also included provisions addressing the growing rice base acreage by calculating the base from prior years' planted and considered planted acres; in 1987, a 3-year prior average would be used, and so on, until the current base is equal to the 5-year previous average.

The Senate and House committee proposals both provide authority for substantial acreage limitation programs, although each would achieve it differently. The Senate authorizes a higher ARP, 35 percent versus 25 percent in the House committee proposal, but the paid diversion under the Senate proposal is voluntary. On the other hand, the House authorizes a PIK diversion program for further acreage reductions of up to 25 percent. Thus, given an attractive PIK compensation rate under the House proposal, participation in an expanded acreage reduction program could be kept at a high level. And, given an attractive cash diversion rate, the Senate proposal could result in a total acreage reduction comparable to that achievable under the House committee bill.

Since both proposals offer producers lower loan rates and an ability to repay loans at levels close to world prices, exports are likely to be similar under both proposals. The lower loan rates would permit the United States to regain some momentum in world rice trade, gradually increasing exports perhaps to the 1982 level, which was about 82 million cwt.

When Congress resumes debate on the 1985 farm bill this fall, look for continued discussion of these provisions. The Administration favors the direction of loan rates offered by the committees, but the target price provisions imply excessive budget exposure and outlays. Dealing with the Federal deficit and reducing Government outlays have become a paramount objective of both the Congress and the Administration, and this means further negotiations on commodity program provisions are highly likely. [*Barbara C. Stucker (202) 786-1840*].

WORLD OUTLOOK AND SITUATION

The global rice outlook for 1985/86 features large supplies, limited import demand, and falling prices. World production is forecast at 316 million tons (458 rough basis), down 2 million from last year's record. No significant shortfalls are anticipated for any major importers or exporters.

Foreign rice production set five consecutive records from 1980 through 1984, and the average growth rate was 3.5 percent. Production gains were particularly strong by the world's largest producers: China, India, and Indonesia. These countries produce nearly two-thirds of the world's rice.

The 1985/86 rice harvest in China is expected to be 120 million tons, down 4 million from last year's record. China announced a dramatic price reform program last October that reduced the price incentives for rice farmers to produce above their contracted amounts. The reforms require the Government to buy all rice offered for sale only if market prices fall sharply below the old quota price. Recent reports from China indicate that farmers are responding to the new policies by planting a smaller area and using less fertilizer.

Record crops are expected in 1985/86 in India and Indonesia, and in Bangladesh, the world's fourth largest rice producer. The increased use of high-yielding varieties, especially those resistant to pests and diseases, and the expanded application of fertilizers and chemicals have boosted yields in many rice-producing nations.

World rice consumption has kept pace with production over the past decade with an annual growth of over 3 percent. Ending stocks, forecast at 21.6 million tons in 1985/86, will be more than adequate to meet many individual nations' stock-holding goals. Some former importers such as India and Indonesia now have surplus stocks and will be looking for export markets this year. India may end the 1985/86 year with stocks near 8 million tons, over three times those of any other country. Indonesia would also like to find an outlet for some of its surplus production, as ending stocks may reach 2.5 million tons this year.

Global rice trade in 1985 is expected to decline from 12.7 million tons in 1984 to 11.6 million, down 9 percent. Weaker world demand is hurting the prospects of all major exporters. Exports in 1985 likely will be lower for each of the top five exporters: Thailand, the United States, China, Pakistan, and Burma.

Rice exports by the world's leading suppliers 1984-1985

Country	1984	1985 forecast	Jan-June 1984	Jan-June 1985
	Million Metric Tons			
Thailand	4.53	4.25	2.3	2.3
United States	2.13	2.00	1.06	0.89
China	1.17	1.00	--	--
Pakistan	1.06	0.90	.63	.30
Burma	.75	0.50	.38	.15

-- Not available

Thailand has had the greatest success in keeping its 1985 exports near the 1984 mark. Although January-June 1985 exports equaled last year's record-setting pace, exports during July-September dropped off significantly from 1984 levels. Current data for China, the world's third largest exporter in 1984, are not available, but China is not likely to improve on its 1984 exports considering the difficulty other competitors have had in finding markets this year.

Pakistan exported very little rice in the first quarter of 1985 because its prices were much higher than Thailand's. Sales by the Rice Export Corporation of Pakistan (RECP) have increased markedly since April when a system of weekly tenders was initiated. Recent sales of Pakistani rice in the $140-$150-per-ton range have undercut Thai prices and intensified the competition for the lower quality rice markets.

Burma has also found it difficult to find buyers in 1985, because its prices earlier in the year were uncompetitive. Burma's exports during the first 7 months of 1985 amounted to about 214,000 tons, 57 percent below a year earlier. Exports in July jumped to 52,000 tons and will have to increase further to reach the 500,000 tons forecast for 1985.

Many other nations have surplus rice stocks for export, and this will undoubtedly

pressure prices as the summer rice harvest continues across the world. Taiwan, for example, which exported only 11,000 tons in the first half of 1985, announced an aggressive pricing policy in August for 100,000 tons of its 1983 stored crop. Taiwan is offering prices between $127 and $138 per ton in addition to short-term financing for large purchases. Also, the Government of Argentina lowered export taxes by more than 50 percent in August to allow export prices to become more competitive.

U.S. rice exports during the first half of 1985 totaled 889,430 tons (milled basis), down 16 percent from first-half 1984. Sales declined to many important commercial customers such as Iraq, Liberia, Nigeria, Saudi Arabia, South Africa, and Yemen. U.S. exporters have found it increasingly difficult to compete with lower-priced Thai rice. The difference between average prices of U.S. and Thai rice (f.o.b. Rotterdam) for the first half of 1985 was $247 per ton, up from $213 for first-half 1984 (table 21). With over 90 percent farmer participation in the Government rice program, the loan rate of $8.00/cwt supports U.S. farm prices and consequently also supports export prices. U.S. monthly farm prices for rough rice averaged $7.99 per cwt ($176 per metric ton) during first-half 1985. After milling and transportation costs are included, most commercial sales of U.S. rice in 1985 have ranged from $350 to $450 per ton (f.o.b.). Prices for comparable grades in Thailand have ranged from $200 to $260 per ton (f.o.b.). Even though many international customers prefer the quality of U.S. rice, the wide difference in price continues to hamper U.S. commercial sales.

U.S. rice exports in 1985 have been boosted by a special $90-million Commodity Credit Corporation (CCC) drought relief program for Africa. The program, which was announced in May 1984, made available up to $90 million worth of grain to private exporters for resale to African countries hurt by severe drought. U.S. exporters acquired the commodities from the CCC on a competitive bid basis and then shipped the grain.

By early September 1985, four tenders had occurred under the African program involving 229,000 tons of rice worth $60 million. While $76.5 million of the $90 million worth of grain has already been used, a fifth tender was recently announced for the remaining $13.5 million. The following African nations have purchased a total of 229,000 tons of rice thus far under the program: Benin, 11,440 tons; Burkina Faso, 38,190; Djibouti, 7,300; Guinea, 12,500; Mali, 25,910; Senegal, 124,620; Zaire, 9,160.

The CCC sales program to Africa has been an important means of increasing exports to nations that need rice but would not have otherwise purchased such large quantities from the United States. Although the program will contribute nearly 10 percent to U.S. rice exports in 1985, it is not likely that the program will be extended to 1986.

Another Government-assisted boost to U.S. rice exports was the signing of a $40-million P.L. 480, Title I agreement with the Philippines in July. The P.L. 480 program for the Philippines was resumed this year following a 5-year lapse largely to support the Philippines as it implements austerity policies to remedy its ailing economy. In addition to declining real income (annual per capita income was about $600 in 1984) and 35-40 percent inflation, the Philippines faces a rice production shortfall that requires imports of over 500,000 tons in 1985. The Philippines has already purchased over 100,000 tons each this year from China, Indonesia, and Thailand. The Philippines tendered for U.S. rice in late July and purchased over 150,000 tons of medium grain brown rice to be shipped by the end of September.

World rice trade in 1984 is highlighted in table 2, which lists the quantities of rice (milled basis) shipped from 8 exporters to 39 importing countries and 7 importing regions in 1984. Data come from official statistics or the next best alternative from the eight exporters. The total quantity imported by each importer is the USDA estimate contained in the September 1985 *Foreign Agricultural Circular, Grains.*

The United States exported 2.129 million tons of rice in 1984, compared with 2.331 million in 1983, a decline of 202,000 tons. Much of the decline occurred in South America, where U.S. exports plunged from 214,000 tons in 1983 to 67,000. Exceptional rice harvests in Peru and Bolivia reduced import needs substantially. Another major

Table 2.--World rice trade, calendar 1984 (1000 mt. milled equivalent)

Importers	Exporters										1984 Total
	US	Thailand	China	Pakistan	Burma	Australia	Italy	Uruguay	Other	Unact	
Brazil	0	0		0	0	0		4		268	272
Canada	96	7	0	0	0	1		0		12	115
Cuba	0	53	100	0	0	0		0		47	200
Mexico	0	103	25	0	0	0		0		40	168
Peru	43	0	0	0	0	0		0		5	48
W.-Hemisphere	114	51	0	0	0	0		1	10	24	200
EC-10	302	272	3	0	8	15	120	15	15	354	1,105
Portugal	47	0	0	0	0	0		12	25	21	105
Spain	22	1	0	0	0	28		0		41	92
Switzerland	64	--	0	0	0		12	0		4	80
W. Europe	21	2	5	0	0	33	3	1	0	35	100
E. Europe	8	23	100	30	10	0	10	0	164	(0)	344
USSR	0	0	0	0	0	0		0	150	300	450
Iran	0	416	0	154	0	1		90	45	25	730
Iraq	448	38	0	0	0	0		0		4	490
Kuwait	7	22	0	41	0	2		3		7	80
Saudi Arabia	268	88	0	56	0	14	10	0		95	530
Syria	0	131		0	0	0		0		(1)	130
Turkey	22	4	0	51	0			0		9	85
U.A. Emirates	4	52		39	0	0		0		25	120
Mid. East	59	(0)	0	69	0	12	50	0	1	110	300
Cameroon	0	98		128	0	0		5		(171)	60
Ivory Coast	7	53	50	72	83	0		0		104	368
Liberia	81	5		0	0	0		0		5	90
Madagascar	33	14	0	0	16	0	0	0	14	22	99
Mali	28	1		50	12			0		(2)	90
Mauritania	0	106		0	0	0		0		(2)	105
Mauritius	0	1	50	25	11	1		0		17	104
Mozambique	0	28	20	0	0	8	22	0	32	0	110
Nigeria	22	253		172	0	0		0		3	450
Senegal	3	326		3	0	0		0	2	40	375
S. Africa	129	56	0	0	0	0	1	21		(21)	186
Africa	131	318	20	53	60	0	30	3	36	100	750
Bangladesh	61	397	15	0	110	0		0	10	(42)	550
China	0	100	0	0	0	0		0		0	100
Hong Kong	0	157	164	0	0	32		0		13	366
India	8	278	0	0	194	0		0		265	745
Indonesia	61	20	85	13	63	0		0	84	60	387
Japan	1	18	0	0	0			0	135	(2)	152
Korea, Rep	0	---	0	0	0	0		0		7	7
Malaysia	0	345	0	47	24	1		0		20	437
Philippines	23	110	75	0	0	0		0		5	213
Singapore	1	200	3	0	1	2		0		(9)	199
Sri Lanka	0	---	0	0	60	0		0		(40)	20
Vietnam	0	284	0	0	10	0		0		6	300
Asia/Oceania	15	35	0	3	7	153		0	9	28	250
Unaccounted	0	63	453	54	80	19	123	0	1,446		410
Total 1984	2,129	4,528	1,168	1,057	750	322	381	155	2,177	---	12,667

1/ Parentheses donote negative values and blanks denote incomplete market information. 2/ -- Less than 500 tons. 3/ Large quantities of rice are trans-shipped from Cameroon to neighboring West African nations. 4/ Much helpful information for Table 2 was provided by ERS country analysts and by Jeff Hesse and Daryl Brehm, FAS rice analysts.

Table 3.--United States Rice Exports (1000 metric tons)

Fiscal	P.L. 480 exports	GSM credit exports	CCC African relief exports	Total P.L. 480, GSM and CCC exports	Other exports	Total U.S. rice exports	P.L. 480, GSM, AND CCC exports as a share of total exports
							Percent
1975	747	48	95	747	1,419	2,214	36
1976	509	101	610	509	1,340	1,950	31
1977	609	15	0	705	1,614	2,319	30
1978	530	50	0	580	1,696	2,276	25
1979	486	42	0	528	1,868	2,396	22
1980	540	168	0	708	2,247	2,955	24
1981	360	452	0	812	2,360	3,172	26
1982	374	14	0	388	2,523	2,911	13
1983	475	328	0	803	1,473	2,276	35
1984	390	571	20	1,981	1,283	2,293	43
1985	* 590	* 430	* 180	* 1,200	* 800	* 2,000	* 60

* Forecast quantity.

decline in U.S. exports took place in South Korea, where shipments dropped from 217,000 tons to only 357. Partially offsetting these declines was a gain in U.S. sales to Iraq, which rose from 280,000 tons in 1983 to 448,000 tons in 1984. Iraq was the largest customer for U.S. rice in 1984 due largely to the GSM-102 financing made available.

The United States has struggled in recent years to maintain commercial sales in the face of excess world production and uncompetitive U.S. export prices. Total rice exports fell from a peak of 3.172 million tons in fiscal 1981 to a forecast 2.0 million in fiscal 1985, and they would have fallen even further had there not been increases under Government programs such as P.L. 480, GSM-102, and the CCC African Drought-Relief Program. The sharp decline in non-Government-assisted exports (table 3) clearly indicates the problems facing U.S. rice exporters.

Non-Government-assisted exports have fallen from an average of 2.4 million tons in fiscal 1980-82 to roughly 800,000 in 1985, while Government-assisted exports have risen from an average of 636,000 tons in fiscal 1980-82 to about 1.2 million forecast for 1985.

In recent years, some former U.S. customers such as Indonesia and Korea have achieved self-sufficiency in rice production. In other markets, such as the European Community, Nigeria, Mexico, South Africa, and Saudi Arabia, Thailand has increased its market share at the expense of the United States. The future for U.S. rice exports is not promising if domestic price support policies prevent U.S. prices from declining to levels dictated by world supply and demand conditions. [*Scott R. Reynolds (202) 786-1691*]

POTENTIAL IMPACT OF CALIFORNIA LONG GRAIN RICE PRODUCTION ON U.S. MILLED RICE FLOW PATTERNS

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Abstract: The loss of commercial medium grain export markets, changes in price relationships, and improvements in long grain varieties have created an incentive for California rice producers to switch from medium to long grain rice. A transshipment model was used to identify the potential adjustments that may occur in the spatial organization of the U.S. rice milling industry if California significantly increases its long grain production. Findings indicate that a substantial reallocation of domestic long grain rice flows could result and that Arkansas mills would likely lose the most market share.

Keywords: Rice, flow patterns, transshipment model, spatial organization.

California has traditionally been the major producer of medium and short grain rice, supplying approximately 50 and 90 percent, respectively, of total U.S. output. The Southern States have produced virtually all of the long grain and the remainder of the medium and short grain types. However, as U.S. rice exports contracted from record levels in 1980/81, particularly large buildups of medium and short grain stocks occurred in California (table 4). In response, rice producers there initiated commercial production of long grain rice in 1982. The State's harvested area of long grain rice increased from 14,000 acres in 1982 to 59,000 by 1984 (table 5). Continued expansion of long grain acreage in California has significant implications for the Southern rice industry.

This study reports the results of an analysis of the potential impact of expanded California long grain production upon the U.S. milled rice flow patterns.

Changing Environment for California Long Grain Rice

In addition to the loss of export markets and the buildup of stocks, other developments

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Table 4.--Exports and ending stocks of U.S. rice by type, 1979/80 - 1983/84

Marketing year	Exports (milled)		Ending stocks*	
	Long	Medium/ short	Long	Medium/ short
	1,000 metric tons			
1979/80	1,666	1,040	477	434
1980/81	1,644	1,383	221	225
1981/82	2,054	628	661	1,216
1982/83	1,514	705	968	1,897
1983/84	1,460	811	573	1,228

* Rough only, Aug. 1

Source: Rice Market News, AMS; Rice Stocks, SRS, and Rice Situation and Outlook, ERS.

Table 5.--California rice area harvested, by type and total, 1980-84

Year	Type			
	Long	Medium	Short	Total
	1,000 acres			
1980	*	452	113	565
1981	*	458	135	593
1982	14	406	115	535
1983	22	199	107	328
1984	59	281	90	430

* Data not published separately but included in medium grain.

Source: Crop Production, SRS, USDA.

also encouraged California producers to shift to long grain rice. First, rough rice price differences between long and medium grain during the last several years have encouraged California producers to switch . The ratio of long grain to medium grain prices has increased significantly from 0.93 in 1981/82 to 1.29 in 1984/85. In 1983, the revenue incentive to switch to long grain was further enhanced by the California Rice Growers Association, which offered members a rough rice premium of $2.00 per cwt for long grain.

Second, changes in loan rates have also moved in favor of long grain. Loan rates of long grain milled rice relative to medium grain rice have moved from a ratio of 1.14 in 1981/82 to 1.38 in 1984/85. For the 1983 crop, the head rice loan rates for No. 2 long and medium grain rough rice were 14.96 and 12.21 cents per pound, respectively. Assuming representative milling yields and average field yields, a California producer would have grossed approximately $10.00 more per acre by growing medium grain rice rather than long grain. However, based on the 1984 head rice loan rates of 14.96 cents for long grain and 10.81 for medium grain, and assuming the same relative milling and field yields, gross returns would have been about $42.00 per acre greater for long grain.

Finally, since the early 1980's, improved California long grain varieties have narrowed the yield gap between long grain production and the output of California medium and short grain varieties. Milling yield and cooking quality of California long grain have also been significantly improved.

Method of Analysis

A linear programming optimization model of transshipments was used to minimize the cost of transfer of U.S. milled rice from supply points (mills) directly or through intermediate transshipment points (ports) to points of final destination. Each potential transfer from a mill point to final destination was represented by an activity of the model. The following constraints were imposed upon the optimization framework:

1. Shipments of milled rice from a mill must be equal to or less than the available supply in the 1981/82 marketing year.

2. Receipts of milled rice must be equal to the 1981/82 distribution to points of final destination.

General assumptions included the following: (1) the prices paid for rough rice plus the milling margin were equal at all milling centers, (2) costs of production, assembly (which is a function of production density around each mill center), and milling were the same, (3) rice type, i.e. long, medium, or short, was the only distinction in product, (4) supply and demand were perfectly inelastic 2/, (5) transportation costs reflected the average cost to the region as a whole, (6) truck and rail were used for domestic movements and ocean freight for export movements, (7) storage of excess supply was located at milling centers, and (8) storage cost was equal at all locations.

Data

Rice marketing year 1981/82 was selected as the base year from which the transshipment model results would be compared, since it was just prior to the time that California began producing long grain rice on a commercial scale. Industry and USDA data were used to make the initial allocation for supply and demand of long, medium, and short grain rice at six selected rice milling centers, including Jonesboro, and Stuttgart, Ark., Greenville, Miss., Crowley, La.; Houston, Tex.; and Sacramento, Calif.

Fifteen domestic demand points were selected, including (1) a direct food use demand for the nine major geographic regions in the United States. (table 6); (2) four processed food use demand points--one cereal, two package mix, and one nonspecific processor; and (3) two demand points to

2/ While a reactive program would provide a refinement in analysis, in reality the supply and demand elasticities for U.S. rice are extremely low, according to Warren R. Grant, John Beach, and William Lin, in "Factors Affecting Supply, Demand, and Prices of U.S. Rice." (ERS Staff Report, AGEC 840803: USDA, October 1984)

Table 6.--States included in each of the nine major U.S. geographical regions*

Region	State
East South Central	Kentucky, Tennessee, Alabama, Mississippi
West North Central	Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
West South Central	Arkansas, Louisiana, Oklahoma, Texas
Middle Atlantic	New York, New Jersey, Pennsylvania
Mountain	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
East North Central	Ohio, Indiana, Illinois, Michigan, Wisconsin
South Altantic	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
Pacific	Washington, Oregon, California, Alaska, Hawaii
New England	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut

*Regions are used to represent direct food use demand for rice.

Table 7.--Regions represented by each of the 13 major export demand points for rice

Demand point	Region a/
Basra, Iraq	Mideast b/
Jidda, Saudi Arabia	Mideast b/
Dammam, Saudi Arabia	Mideast b/
Lagos, Nigeria	West Africa
Abidjan, Ivory Coast	West Africa
Cape Town, South Africa	South Africa
Djakarta, Indonesia	Asia c/
Inchon, South Korea	Asia c/
Antwerp, Belgium	Europe
Veracruz, Mexico	North America
San Juan, Puerto Rico	North America
Callao, Peru	South America
Santos, Brazil	South America

a/ Total demand by region was allocated to demand points within a region based upon the proportional share of 1981/82 imports demand point accounted for according to the U.S. Bureau of Census in Rice Market News, Dec. 7, 1982. b/ Mideast countries include Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Pakistan, Qatar, Saudi Arabia, South Yemen (Aden), and Yemen (San'a). c/ Asian countries include Bahrain, Bangladesh, China (Taiwan), Hong Kong, India, Indonesia, Japan, Kampuchea (Cambodia), Malaysia, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Turkey, and Laos.

represent total use of rice by the beer industry. The four export transshipment points included three Gulf ports and one West Coast port. Thirteen foreign destinations were selected to represent demand for U.S. rice in major regions of the world (table 7).

Truck rates were based on mileage times $1.20 per loaded mile divided by 450 cwt per truckload. Rail rates were based on the lowest cost, including unit or multicar rates where appropriate and single car rates otherwise. Rail and truck rate data were obtained from rice mill transportation departments and ocean freight rates from steamship companies.

Model Validation

The transshipment model generates optimal distributions in that transportation costs are minimized by routing milled rice flows from supply points, or through transshipment points (ports). For comparison with the optimal or model solutions, an approximation of the actual 1981/82 supply and demand configuration for long grain rice is given in table 8.

In this analysis, the model solutions require substantially fewer channels for satisfying supply and demand than the number of channels actually used. This is due to the aggregation of product types and regions and assumptions about costs other than transportation. The differences between the actual 1981/82 distributions and the model solutions reflect the simplifying assumptions required for the model and inefficiencies in rice distribution as well as the extent to which transportation cost differentials must be

Table 8.--Origin-destination of 1981/82 long grain rice: Approximate allocations with California supply at 141,000 cwt

Demand point	Milling center						Total
	Jonesboro, AR	Stuttgart, AR	Crowley, LA	Greenville, MS a/	Houston, TX	Sacramento CA	
	1,000 cwt						
Total supply	12,596	12,599	5,571	9,164	23,705	141	63,776
Domestic							
Direct food use							
New Eng.-Boston, MA	b/ 42	b/ 42	---	44	219	---	347
Mid. Atl.-New York, NY	958	959	110	996	1,265	---	4,288
E.N. Cent.-Chicago, IL	374	374	---	389	359	1	1,497
W.N. Cent.-Minn., MN	107	107	4	112	317	---	647
So. Atl.-Wash., D.C.	665	665	187	692	1,100	1	3,310
E.S. Cent.-Birm., AL	79	79	58	82	98	---	396
W.S. Cent.-Dallas, TX	310	310	278	322	1,217	1	2,438
Mountain-Denver, CO	125	125	2	130	102	8	492
Pacific-Los Ang., CA	364	364	30	379	1,016	130	2,283
Subtotal	3,024	3,025	669	3,146	5,693	141	15,698
Processors							
Cereal-Battle Creek, MI	195	196	75	28	1	---	495
Package mixes							
San Francisco, CA	115	115	72	17	153	---	472
New York, NY	233	223	146	34	310	---	956
Other-New Orleans, LA	---	---	20	---	112	---	132
Subtotal	543	544	313	79	576	0	2,055
Beer	1,427	1,427	545	681	1,742	---	5,822
Total Domestic	4,994	4,996	1,527	3,906	8,011	141	23,575
Export	7,602	7,603	4,044	5,258	15,694	0	c/ 40,201

a/ Includes facilities in Tennessee and Florida. b/ Initial allocation between Jonesboro and Stuttgart was made equal to avoid disclosure. c/ Includes territories.

Source: Allocations based on the Monthly Statistical Statement, RMA, and U.S. Rice Distribution Patterns, 1980/81, Stat. Bul. No. 693, ERS, USDA.

compensated for by lower costs of production, assembly, and milling.

Finally, the model solution implies an equilibrium which could not necessarily occur without substantial investment and disinvestment in rice milling facilities. Results of the analysis are, therefore, suggestive only of the economic pressures which could come to bear upon the various rice growing areas and milling centers if long grain production increases to a higher level in California.

The analysis was conducted by examining the model solutions over 14 levels of long grain production in California, from the actual 1981/82 crop of 141,000 cwt (milled) to 10 million cwt. For the purpose of brevity, the discussion focuses on a comparison of the changes associated with model solutions for long grain distribution only when the California milled rice supply is increased from 141,000 cwt (table 9) to 1.5 million cwt (table 10).

The assumption regarding increases in the supply of long grain rice production in California was based on a substitution equivalent to the 1981/82 production level of 0.86 cwt of long grain rice for 1.00 cwt of medium grain rice. This is derived from an expected yield substitution of 60 cwt per acre of long grain for 70 cwt per acre of medium grain. To satisfy the total medium grain demand, the reduced California production of medium grain was allocated equally to the other milling centers.

Long Grain Market Impacts

With the California long grain rice supply at 141,000 cwt, California mills would satify only processor demand in California (table 9). With California production at 1.5 million cwt, the increase in supply satisfies all of the West Coast direct food use market as well as the San Francisco processor market (table 10). As a result, the Stuttgart milling center loses

Table 9.--Origin-destination of 1981/82 long grain rice: Least-cost allocation with California supply at 141,000 cwt

Demand point	Milling center						Total
	Jonesboro, AR	Stuttgart, AR	Crowley, LA	Greenville, MS a/	Houston, TX	Sacramento CA	
	1,000 cwt						
Total supply	12,596	12,599	5,571	9,164	23,705	141	63,776
Domestic							
Direct food use							
New Eng.-Boston, MA	---	347	---	---	---	---	347
Mid. Atl.-New York, NY	3,179	1,109	---	---	---	---	4,288
E.N. Cent.-Chicago, IL	1,497	---	---	---	---	---	1,497
W.N. Cent.-Minn., MN	647	---	---	---	---	---	647
So. Atl.-Wash., D.C.	---	3,310	---	---	---	---	3,310
E.S. Cent.-Birm., AL	---	---	---	396	---	---	396
W.S. Cent.-Dallas, TX	---	2,438	---	---	---	---	2,438
Mountain-Denver, CO	---	492	---	---	---	---	492
Pacific-Los Ang., CA	---	2,283	---	---	---	---	2,283
Subtotal	5,323	9,979	0	396	0	0	15,698
Processors							
Cereal-Battle Creek, MI	495	---	---	---	---	---	495
Package mixes							
San Francisco, CA	---	331	---	---	---	141	472
New York, NY	956	---	---	---	---	---	956
Other-New Orleans, LA	---	---	---	132	---	---	132
Subtotal	1,451	331	0	132	0	141	2,055
Beer	5,822	0	0	0	0	0	5,822
Total Domestic	12,596	10,310	0	528	0	141	23,575
Export	0	2,289	5,571	8,636	23,705	0	b/ 40,201

a/ Includes facilities in Tennessee and Florida. b/ Includes territories.

Table 10.--Origin-destination of 1981/82 long grain rice: Least-cost model allocation with California supply at 1,500,000 cwt

Demand point	Milling center						Total
	Jonesboro, AR	Stuttgart, AR	Crowley, LA	Greenville, MS a/	Houston, TX	Sacramento CA	
	1,000 cwt						
Total supply	12,596	12,599	5,571	9,164	23,705	1,500	65,135
Domestic							
Direct food use							
New Eng.-Boston, MA	---	347	---	---	---	---	347
Mid. Atl.-New York, NY	3,179	1,109	---	---	---	---	4,288
E.N. Cent.-Chicago, IL	---	---	---	1,497	---	---	1,497
W.N. Cent.-Minn., MN	647	---	---	---	---	---	647
So. Atl.-Wash., D.C.	---	3,310	---	---	---	---	3,310
E.S. Cent.-Birm., AL	---	---	---	396	---	---	396
W.S. Cent.-Dallas, TX	---	2,438	---	---	---	---	2,438
Mountain-Denver, CO	---	492	---	---	---	---	492
Pacific-Los Ang., CA	---	1,255	---	---	---	1,028	2,283
Subtotal	5,323	8,951	0	396	0	1,028	15,698
Processors							
Cereal-Battle Creek, MI	495	---	---	---	---	---	495
Package mixes							
San Francisco, CA	---	---	---	---	---	472	472
New York, NY	956	---	---	---	---	---	956
Other-New Orleans, LA	---	---	---	132	---	---	132
Subtotal	1,451	0	---	132	0	472	2,055
Beer	5,822	0	0	0	0	0	5,822
Total Domestic	12,596	8,951	0	528	0	1,500	23,575
Export	0	2,289	5,571	8,636	23,705	0	b/ 40,201
Excess supply	0	1,359	0	0	0	0	1,359

a/ Includes facilities in Tennessee and Florida. b/ Includes territories.

about half of the California long grain direct food use market and all of the processor demand. At a supply of 1.5 million cwt, California would not export long grain rice.

Conclusions

Based on the assumptions of the transshipment model over the range of long grain milled rice supply levels selected for the analysis, California was successful in competing for a larger share of the domestic market. With its long grain milled rice supply at 1.5 million cwt, California satisfied all of the Pacific Region direct food use and processed food use demand.

If large scale production of long grain rice becomes a reality in California, results of the analysis indicate that, based on model assumptions, Arkansas rice mills would feel the brunt of the long grain market losses to California.

The proximity of Louisiana, Mississippi, and Texas rice mills to Gulf ports gives them a transportation cost advantage for some shipments in the U.S. rice export market relative to Arkansas. Thus, in the long run, these milling centers could shift much of their domestic long grain market losses to the export market.

Although not included in this paper, the analysis also indicated that if California continues to substitute more long grain for medium grain acreage, it would eventually lose a substantial share of its medium grain market to the Southern rice producing region. Arkansas mills would gain California's medium grain losses in the domestic market, and Louisiana, Texas, and Mississippi mills would get most of the medium grain exports.

Table 11.--Rice (rough equivalent): Supply, disappearance, area, and prices 1/

Item	1982/83	1983/84	1984/85 2/	1985/86 3/
		Million cwt		
Supply				
Beginning stocks, August 1	49.0	71.5	46.9	64.7
Production	153.6	99.7	137.0	126.1
Total 4/	203.1	171.9	185.4	192.8
Disappearance				
Food 5/	37.3	33.0	35.7	37.4
Seed	3.2	3.3	2.8	2.6
Brewers	13.5	12.8	13.8	14.0
Total domestic 6/	62.9	54.7	59.7	60.0
Exports	68.9	70.3	61.0	59.0
Total	131.8	125.0	120.7	119.0
Ending stocks, July 31	71.5	46.9	64.7	73.8
		Million acres		
Area				
Planted	3.29	2.19	2.80	2.47
Harvested	3.26	2.17	2.78	2.45
Allotment	1.80	---	---	---
		Pounds per acre		
Yield per harvested acre	4,710	4,598	4,926	5,148
		Dollars per cwt		
Prices				
Received by farmers	8.11	8.76	8.25	7.80-8.80
Loan rate	8.14	8.14	8.00	8.00
Target rate	10.85	11.40	11.90	11.90

1/ Consolidated supply and disappearance of rough and milled rice. Milled-rice data converted to rough-rice basis using annually derived extraction rates as factors. 2/ Preliminary. 3/ Projected. 4/ Includes imports. 5/ Food use includes shipments to U.S. territories. 6/ Includes a residual.

Table 12.--Rough rice: supply and disappearance 1/

Item	Year beginning August 1		
	1982	1983	1984
	1,000 cwt		
Beginning stocks	41,387	63,157	39,706
Farm production	153,588	99,720	137,033
Supply	194,975	162,878	176,739
Domestic 3/	131,244	119,934	114,386
Exports	574	3,238	3,203
Disappearance	131,818	123,172	117,589
Ending stocks, July 31	63,157	39,706	59,150

1/ Includes supply and disappearance of rough rice only. 2/ Preliminary. 3/ Includes mill use, seed, and a residual.

Table 13.--Milled rice: Supply and disappearance 1/

Item	Year beginning August 1		
	1982	1983	1984
	1,000 cwt		
Beginning stocks	5,477	5,896	5,121
Production	84,475	79,012	74,580
Imports	469	540	1,091
Supply	90,421	85,448	80,792
Food 3/	26,413	23,753	24,148
Brewers' use	9,613	8,825	9,569
Exports	48,499	47,749	43,233
Disappearance	84,525	80,327	76,950
Ending stocks, July 31	5,896	5,121	3,842

1/ Includes supply and disappearance of milled rice only. 2/ Preliminary. 3/ Includes shipments to U.S. territories.

Table 14.--Rice: Acreage, yield, production, by State

State	Planted		Harvested		Yield		Production	
	1984	1985 1/	1984	1985 1/	1984	1985 1/	1984	1985 1/
	1,000 acres				Pounds		1,000 cwt	
Arkansas	1,160	1,080	1,150	1,050	4,600	4,660	52,900	48,930
California	432	380	430	380	7,040	7,200	30,283	27,360
Louisiana	530	480	528	463	4,150	4,550	21,932	21,067
Mississippi	195	190	190	185	4,350	4,800	8,265	8,880
Missouri	77	65	76	64	4,600	4,600	3,493	2,944
Texas	410	310	408	308	4,940	5,500	20,160	16,940
U.S.	2,804	2,505	2,782	2,450	4,926	5,148	137,033	126,121

1/ Preliminary.

Source: Crop Production, Crop Reporting Board, SRS, USDA.

Table 15.--Rice stocks: Rough and milled 1/

Date	Rough					Milled			
	On farms or in farm warehouses	At mills and in attached warehouses	In warehouses (not attached to mills)	In ports or in transit	Total all positions	At mills and in attached warehouses	In warehouses (not attached to mills)	In ports or in transit	Total all positions
					1,000 cwt				
January 1									
1979	28,089	16,829	50,100	899	95,917	3,517	542	2,080	6,139
1980	31,021	15,038	57,278	581	103,918	3,137	810	2,123	6,070
1981	26,179	21,111	48,817	6	96,113	3,055	929	2,556	6,540
1982	48,404	22,952	59,117	911	131,384	2,735	907	1,414	5,056
1983	34,551	24,151	76,070	200	134,972	2,960	858	2,401	6,219
1984	30,681	19,541	64,143	344	114,709	3,867	456	1,395	5,718
1985 2/	32,426	19,535	74,514	797	127,272	3,343	524	2,058	5,925
April 1									
1979	14,381	18,158	34,161	820	67,520	3,979	282	2,444	6,705
1980	12,030	15,581	39,224	563	67,398	3,500	402	2,888	6,790
1981	5,977	15,078	28,673	64	49,792	3,499	1,099	3,214	7,812
1982	26,807	21,289	41,773	411	90,280	4,371	725	1,689	6,785
1983	23,778	22,307	62,649	299	109,033	3,295	492	3,165	6,952
1984	15,802	17,432	46,515	17	79,766	3,838	464	2,999	7,301
1985 2/	18,709	16,438	60,188	707	96,042	3,538	481	2,101	6,120
August 1									
1979	623	8,781	15,033	701	25,138	2,531	374	1,678	4,583
1980	563	9,248	9,940	342	20,093	2,128	403	1,504	4,035
1981	208	5,417	4,206	9	9,840	2,744	446	1,665	4,855
1982	4,453	12,544	23,906	484	41,387	3,191	409	1,877	5,477
1983	6,032	11,190	45,899	36	63,157	2,843	223	2,830	5,896
1984	1,250	11,017	27,425	14	39,706	3,976	50	1,095	5,121
1985 2/	697	13,398	44,402	653	59,150	3,023	304	515	3,842

1/ These estimates do not include stocks located in States outside the major producing States of Missouri, Mississippi, Arkansas, Louisiana, Texas, and California. 2/ Preliminary.

Source: Rice Stocks, Crop Reporting Board.

Table 16.--Rough rice: Average price received by farmers

Month	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
							Dollars per cwt								
August	5.16	5.15	5.34	10.90	10.20	9.83	6.65	8.02	8.44	10.00	10.60	11.80	7.31	8.41	8.22
September	5.18	5.24	6.37	13.30	10.90	9.19	6.56	8.12	7.56	9.81	10.20	10.70	7.75	8.48	8.17
October	5.26	5.46	7.05	14.80	11.30	8.87	6.48	9.13	7.62	10.30	10.90	10.20	7.73	8.80	8.08
November	5.19	5.25	7.42	16.70	11.60	8.59	6.46	10.20	7.76	9.83	11.60	9.86	7.78	8.80	8.13
December	5.09	5.30	7.64	15.50	10.90	8.51	6.57	11.00	7.98	9.41	13.10	9.34	8.06	8.66	8.08
January	5.31	5.53	7.84	15.80	10.80	7.95	6.79	10.70	8.07	9.88	13.20	9.34	8.05	8.57	8.09
February	5.44	5.55	8.14	16.90	11.30	7.54	6.87	10.70	7.87	11.00	13.00	9.46	8.26	8.85	7.72
March	5.36	5.60	8.26	17.20	11.10	6.17	6.81	10.70	8.18	11.70	13.40	8.99	7.99	8.63	8.17
April	5.33	5.58	8.51	15.90	11.00	7.15	6.95	10.80	8.52	11.60	13.80	8.54	8.23	8.49	8.20
May	5.30	5.57	8.56	17.20	11.10	7.06	7.30	10.10	8.74	11.30	13.30	8.55	8.23	8.24	7.91
June	5.20	5.58	8.74	17.50	11.20	6.82	7.24	9.58	8.73	10.20	11.90	8.54	7.88	8.20	7.83
July	5.33	5.35	10.80	11.90	10.00	7.45	6.87	9.49	9.10	10.80	12.80	8.25	7.95	8.18	7.54
Weighted average	5.17	5.34	6.73	13.80	11.20	8.35	7.02	9.49	8.16	10.50	12.80	9.05	8.11	8.76	8.23
Loan rate	4.86	5.07	5.27	6.07	7.54	8.52	6.19	6.19	6.40	6.79	7.12	8.01	8.14	8.14	8.00

Table 17.--Milled rice: Average price, f.o.b. mills, at selected milling centers

Year and type	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
							Dollars per cwt bagged						
Long 1/							Southwest Louisiana						
1980	20.75	22.00	23.40	25.00	26.75	27.00	27.25	27.70	28.25	28.00	27.90	27.50	25.95
1981	26.40	24.30	23.25	21.90	20.75	19.80	18.60	18.00	17.55	17.60	17.20	17.00	20.20
1982	17.50	17.40	17.50	17.55	18.40	18.35	17.50	17.50	18.50	18.50	18.60	18.75	18.00
1983	19.40	19.75	19.35	19.50	19.50	19.50	19.25	19.25	19.25	19.25	19.25	19.25	19.38
1984 2/	18.25	18.25	17.60	18.00	18.00	18.00	18.00	18.00	18.00	18.00	18.00	17.67	17.98
							Houston, Texas						
1980	21.00	21.70	23.10	24.75	26.55	26.55	25.75	27.10	27.75	28.00	27.40	27.00	25.55
1981	25.00	24.85	23.50	22.60	22.00	21.75	20.20	19.20	19.00	19.00	18.75	17.75	21.15
1982	18.25	18.75	18.00	18.00	18.00	19.00	19.00	19.00	19.00	19.00	19.10	19.40	18.70
1983	19.50	19.65	20.00	20.00	20.00	20.25	20.25	20.25	20.10	19.50	19.50	19.50	19.88
1984 2/	19.38	18.69	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	17.42	18.69
							Arkansas						
1980	20.60	22.00	23.40	24.90	26.10	26.10	25.75	26.70	27.50	28.00	27.90	27.50	25.55
1981	26.40	24.30	23.05	22.30	20.85	19.60	19.00	18.20	17.55	17.40	17.20	16.60	20.20
1982	17.10	17.00	17.00	17.55	18.40	18.35	17.50	17.50	18.00	18.40	18.50	18.50	17.80
1983	18.50	18.50	18.85	19.00	19.00	19.00	18.50	18.50	18.50	18.50	18.50	18.50	18.65
1984 2/	18.38	18.25	18.25	18.25	18.00	18.00	18.00	17.94	17.75	17.81	17.94	17.75	18.03
Medium 1/							Southwest Louisiana						
1980	20.50	20.80	21.60	24.40	26.40	27.00	27.10	27.50	27.55	28.00	28.00	27.75	25.55
1981	26.40	24.20	22.90	21.15	20.00	18.75	17.75	16.10	15.95	16.40	16.20	16.00	19.30
1982	16.50	16.50	16.45	16.65	17.75	17.30	16.50	16.50	16.50	17.10	17.50	17.50	16.90
1983	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50
1984 2/	16.00	16.00	15.50	15.50	15.50	15.50	15.50	16.00	16.19	16.31	18.00	16.17	16.01
							Arkansas						
1980	20.60	21.30	22.50	24.00	25.75	26.10	25.75	26.70	27.40	28.00	28.00	27.50	25.30
1981	26.40	24.10	22.95	21.30	19.85	18.60	17.90	17.05	16.50	16.40	15.90	15.60	19.40
1982	16.10	16.50	16.10	16.65	17.75	17.10	16.50	16.50	16.60	17.10	17.50	17.50	16.80
1983	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.50	17.20	17.00	17.00	17.00	17.35
1984 2/	16.88	16.69	16.35	16.22	16.00	15.75	16.25	15.94	16.31	16.25	16.25	15.92	16.23
Medium 3/							California						
1980	23.00	23.20	24.75	25.00	26.75	30.00	30.00	30.00	30.00	30.00	30.00	30.00	27.70
1981	30.00	27.60	24.50	22.80	21.40	20.50	19.10	18.45	16.90	16.90	16.70	16.40	20.95
1982	16.25	16.10	15.55	15.50	15.50	16.50	16.00	16.00	16.00	15.90	15.95	15.75	15.90
1983	15.65	15.50	15.70	15.50	15.50	15.50	15.50	15.38	15.25	15.25	15.25	15.25	15.44
1984 2/	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25
Short 3/													
1980	23.00	23.20	24.75	25.00	26.75	30.00	30.00	30.00	30.00	30.00	30.00	30.00	27.70
1981	30.00	28.25	25.75	23.90	22.00	22.00	20.25	19.50	18.25	18.25	18.25	18.10	22.05
1982	17.20	16.70	15.55	15.50	15.50	16.90	16.00	16.00	16.00	16.00	16.00	16.00	16.10
1983 2/	15.80	15.50	15.70	15.50	15.50	15.50	15.50	15.38	15.25	15.25	15.25	15.25	15.45
1984 2/	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25	15.25

1/ U.S. No. 2--broken not to exceed 4 percent. 2/ Preliminary. 3/ U.S. No. 1.

Source: Compiled from Rice Market News, AMS.

Table 18.--Rice byproducts: Monthly average price, southwest Louisiana

Year and type	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
Milled second head						Dollars per cwt, bagged 1/							
1980	11.05	10.70	11.00	11.15	12.45	12.90	12.75	13.55	13.40	14.45	14.55	14.10	12.65
1981	13.00	11.90	11.00	11.00	11.00	10.60	10.00	8.60	9.25	10.00	10.00	10.00	10.55
1982	10.00	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75	9.75
1983	9.75	10.25	10.25	10.25	10.25	10.25	10.25	10.81	10.20	10.00	10.00	10.00	10.19
1984	8.50	8.75	8.80	8.00	8.00	8.00	9.00	9.19	9.25	10.00	10.25	10.25	9.00
Rice bran, fob mills						Dollars per ton 2/							
1980	76.90	84.70	86.40	95.50	N.Q.	101.90	73.60	59.10	57.50	60.00	71.60	69.15	76.05
1981	51.50	49.60	52.75	59.90	73.65	82.50	64.35	50.40	55.50	57.50	61.10	N.Q.	59.90
1982	52.80	53.00	54.00	77.65	85.00	77.50	52.15	47.25	59.65	70.30	61.25	N.Q.	62.80
1983	62.15	70.00	94.00	108.35	120.85	98.50	57.50	50.00	67.50	60.00	N.Q.	59.00	77.08
1984	69.16	49.50	45.13	53.75	69.16	85.00	77.50	53.25	40.50	45.67	45.00	47.50	56.76
Rice millfeed, fob mills						Dollars per ton 2/							
1980	29.50	37.40	35.00	36.90	48.40	54.00	15.00	11.00	14.95	17.00	27.00	31.40	29.80
1981	22.60	10.90	17.75	22.00	30.65	29.75	16.50	13.15	13.40	15.40	19.40	N.Q.	19.25
1982	16.00	16.75	15.25	26.15	35.00	45.00	13.50	15.25	19.35	23.60	22.10	23.00	22.60
1983	24.00	25.40	33.30	42.10	61.65	53.00	22.50	24.75	31.20	21.25	25.00	27.75	32.66
1984	23.50	18.75	18.63	19.38	24.50	31.75	34.67	22.00	17.00	16.88	15.00	14.50	21.38

1/ U.S. No. 4 or better. 2/ Prices quoted as bulk. NQ = not quoted.

Source: Compiled from Rice Market News, AMS.

Table 19.--Brewers' prices: Monthly average price for Arkansas brewers' rice and New York brewers' corn grits

Year and State	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Simple average
						Dollars per cwt							
Arkansas													
1980/81	9.75	9.75	9.80	10.10	10.00	10.00	10.00	10.00	10.00	10.00	9.60	9.50	9.90
1981/82	9.30	9.00	8.55	8.25	8.25	8.20	7.60	7.40	7.30	7.00	7.00	6.80	7.90
1982/83	6.55	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50	6.50
1983/84	6.50	6.75	7.00	7.00	6.90	6.76	6.63	6.50	6.62	6.70	6.90	7.10	6.78
1984/85	7.25	7.30	7.30	7.30	7.30	7.30	7.30	7.30	7.15	7.00	6.81	6.75	7.17
New York													
1980/81	11.60	12.11	12.26	12.74	12.42	12.44	12.60	12.64	12.72	12.42	12.57	12.85	12.45
1981/82	12.22	10.45	10.16	9.96	9.97	9.97	10.28	10.48	10.82	10.75	10.66	10.43	10.51
1982/83	9.91	9.75	9.60	9.74	9.78	10.07	10.52	10.82	11.35	11.32	11.58	12.06	10.54
1983/84	12.85	13.06	12.77	12.64	11.96	11.81	11.95	12.58	12.99	12.95	13.19	13.01	12.65
1984/85	12.90	12.64	11.49	11.33	11.03	11.20	11.50	11.86	11.42	11.45	11.54	11.46	11.65

Sources: Compiled from Rice Market News, AMS, and Milling and Baking News.

Table 20.--Thailand milled rice prices, f.o.b. Bangkok, 1/

Type	1981/82	1982/83	1983/84	1984/85
	Dollars per metric ton			
100% 1st grade				
August	528	330	326	317
September	517	313	349	298
October	485	295	336	295
November	458	299	333	273
December	409	307	321	270
January	378	301	310	270
February	364	318	302	261
March	370	330	303	261
April	356	330	305	262
May	342	330	302	262
June	334	319	301	262
July	325	311	318	250
Average	406	315	317	273
100% 2nd grade				
August	508	300	286	281
September	497	283	309	260
October	465	266	300	260
November	438	269	293	238
December	389	277	281	234
January	352	270	268	235
February	332	280	263	230
March	340	290	263	231
April	326	290	265	232
May	312	290	263	230
June	304	279	266	230
July	295	271	283	220
Average	380	280	278	240
5% brokens				
August	498	287	279	272
September	487	270	299	253
October	455	255	290	250
November	428	258	283	228
December	379	266	271	225
January	342	260	258	230
February	324	270	253	221
March	325	282	253	221
April	311	282	256	222
May	299	280	253	223
June	291	269	256	223
July	282	261	273	210
Average	368	270	269	231

1/ Includes export premium, export tax, and cost of bags. Packed in bags of 100 kgs net.
Source: Compiled from Rice Market News, AMS.

Table 21.--Milled rice: Average c.i.f. quotations, at Rotterdam

Type	1981/82	1982/83	1983/84	1984/85
	Dollars per metric ton			
U.S. No. 2 milled, 4%, bagged				
August	629	515	535	500
September	601	463	535	485
October	587	449	530	493
November	562	446	520	496
December	538	451	518	496
January	517	459	518	496
February	508	488	530	496
March	485	496	534	496
April	469	504	531	496
May	474	513	529	496
June	487	532	529	495
July	506	535	513	490
Average	530	488	527	495
Thai SWR 100% Grade A, bagged				
August	603	369	383	382
September	600	363	410	360
October	570	347	392	350
November	520	352	369	302
December	483	363	355	294
January	438	360	351	292
February	424	366	353	290
March	426	389	354	280
April	422	376	355	274
May	408	382	358	265
June	376	372	363	265
July	346	367	382	250
Average	468	367	369	300
Thai SWR 100% Grade B, bagged				
August	583	342	345	333
September	579	338	368	317
October	549	322	351	301
November	497	328	329	272
December	463	338	317	260
January	418	336	315	258
February	402	335	315	254
March	405	348	316	255
April	401	336	315	241
May	382	342	314	244
June	352	335	319	244
July	319	330	337	228
Average	446	336	328	267

Source: Compiled from Rice Market News, AMS.

Table 22.--World rice supply and utilization

Year	Area harvested	Yield 1/	Production 2/ Rough	Production 2/ Milled	Exports 3/	Total use 4/	Ending stocks 5/	Stocks to use ratio 6/
	Million hectares		Million metric tons					
1960/61	120.1	1.95	233.8	160.0	6.5	160.3	8.0	5.0
1961/62	115.7	1.86	215.7	147.3	6.3	147.7	7.0	4.8
1962/63	119.6	1.91	228.2	155.2	7.3	155.3	6.9	4.4
1963/64	121.5	2.05	248.4	169.1	7.7	167.2	8.7	5.2
1964/65	125.3	2.12	265.6	180.8	8.2	177.8	11.8	6.6
1965/66	124.0	2.05	254.2	173.3	7.9	173.1	12.0	6.9
1966/67	125.7	2.09	262.5	179.3	7.8	180.7	10.6	5.9
1967/68	127.0	2.19	277.8	189.4	7.2	186.6	13.4	7.2
1968/69	128.7	2.23	287.0	195.6	7.5	192.3	16.7	8.7
1969/70	131.4	2.25	295.9	201.6	8.2	199.7	18.6	9.3
1970/71	132.7	2.36	313.5	213.6	8.6	214.5	17.7	8.3
1971/72	134.8	2.35	317.5	216.4	8.7	218.8	15.4	7.0
1972/73	132.7	2.31	307.2	209.6	8.4	214.6	10.4	4.8
1973/74	136.6	2.45	334.7	228.0	7.7	225.9	12.5	5.5
1974/75	137.9	2.41	332.0	226.3	7.3	228.2	10.7	4.7
1975/76	142.7	2.51	358.6	243.9	8.4	235.3	19.3	8.2
1976/77	141.4	2.46	348.3	236.9	10.6	238.4	17.8	7.4
1977/78	143.4	2.58	370.0	251.4	9.6	246.4	22.8	9.2
1978/81	144.1	2.69	387.6	263.7	12.0	258.6	27.9	10.8
1979/80	141.5	2.68	378.6	258.1	12.7	262.6	23.4	8.9
1980/81	144.4	2.76	398.9	271.0	13.1	272.3	22.1	8.1
1981/82	145.1	2.84	412.6	280.6	11.8	281.5	21.3	7.6
1982/83	141.2	2.97	419.5	285.7	11.9	289.6	17.4	6.0
1983/84	144.8	3.12	451.5	307.2	12.7	307.3	17.3	5.6
1984/85 7/	145.4	3.21	467.0	318.2	11.6	314.8	20.7	6.6
1985/86 8/	145.4	3.23	469.4	319.6	11.8	319.1	21.2	6.6

1/ Yields are based on rough production. 2/ Production is expressed on both rough and milled basis: stocks, exports, and utilization are expressed on a milled basis. 3/ Exports quoted on yearly basis. 4/ For countries for which stock data are not available, utilization estimates represent "apparent" utilization; i.e., they include annual stock level adjustments. 5/ Stocks data are based on an aggregate of differing market years and should not be construed as representing world stock levels at a fixed point in time. Stocks data are not available for all countries and exclude the USSR, China, North Korea, and parts of Eastern Europe. 6/ Stocks-to-use represents the ratio of marketing year ending stocks to total utilization. 7/ Preliminary. 8/ Forecast.

Source: Compiled from World Grain Situation, FAS.

Table 23.--World rice production and stocks: Selected countries or regions 1/

Country or region	Crop year 2/					
	1980/81	1981/82	1982/83	1983/84	1984/85	1985 as of Aug. 13
	Million metric tons					
Bangladesh	20.8	20.5	21.3	21.8	21.8	22.5
Burma	13.3	14.1	14.4	14.4	14.8	14.5
China, Mainland	139.9	144.0	161.2	168.9	178.3	178.0
India	80.5	80.0	70.7	89.7	89.3	90.0
Indonesia	29.7	32.8	33.6	35.3	38.0	39.0
Japan	12.2	12.8	12.8	13.0	14.8	14.0
Korea, Rep. of	6.0	7.1	7.3	7.6	8.0	7.6
Pakistan	4.7	5.1	5.2	5.0	5.2	5.3
Thailand	17.4	17.8	16.9	19.6	18.3	18.8
Subtotal	324.5	334.2	343.6	375.3	388.5	389.7
Australia	.7	.9	.5	.6	.9	.8
Brazil	8.6	9.2	7.8	9.0	9.0	9.5
EC-10	1.1	1.1	1.1	1.1	1.1	1.2
All others	57.3	58.7	59.4	60.6	61.0	62.2
Total non-U.S.	392.2	404.3	412.5	447.0	460.8	463.8
U.S.	6.6	8.3	7.0	4.5	6.2	5.6
World total	398.8	412.6	419.5	451.5	467.0	469.4
Ending stocks 3/						
Non-U.S.	21.5	19.7	15.1	15.8	18.6	18.9
U.S.	.5	1.6	2.3	1.5	2.1	2.3
World total	22.1	21.3	17.4	17.3	20.7	21.2

1/Production is rough basis, but ending stocks are milled basis. 2/World rice harvest stretches over 6-8 months. Thus, crop year represents the crop harvested in late 1979 and early 1980 in the Northern Hemisphere and the crop harvested in early 1980 in the Southern Hemisphere. 3/Stocks are based on an aggregate of different local marketing years, and should not be construed as representing world stock levels at a fixed point in time. In addition, stocks data are not available for all countries.

Source: Compiled from World Grain Situation, FAS.

Table 24.--World rice trade (milled basis): Exports and imports of selected countries or regions 1/

Country or region	Calendar year				
	1982	1983	1984	1985	1985 as of Aug. 13
	1,000 metric tons				
Exports					
United States	2,487	2,330	2,129	2,000	1,900
Argentina	92	68	185	145	145
Australia	530	281	370	400	500
Burma	701	750	750	500	600
China, Mainland	470	580	1,168	1,000	900
China, Taiwan	307	533	210	130	150
EC-10	826	807	742	745	745
Egypt	22	21	50	20	50
Guyana	35	45	47	35	35
India	633	200	200	200	200
Japan	318	321	102	0	0
Korea, N.	250	250	250	250	250
Nepal	50	0	20	50	25
Pakistan	794	1,299	1,057	900	1,000
Philippines	0	40	0	0	0
Thailand	3,620	3,700	4,528	4,250	4,300
Uruguay	227	189	155	240	260
Other	446	370	554	653	648
World trade	11,823	11,924	12,667	11,568	11,758
Imports					
Bangladesh	296	82	550	450	300
Brazil	124	326	272	200	100
Canada	108	115	115	115	115
China, Mainl.	250	75	100	100	100
Cuba	201	207	200	200	200
East Europe	303	291	344	325	335
EC-10	1,169	979	1,105	1,055	1,040
India	10	315	745	50	50
Indonesia	328	1,175	387	50	50
Iraq	369	474	490	500	550
Iran	587	680	730	750	800
Ivory Coast	357	434	368	300	300
Korea, Republic of	228	216	7	0	0
Kuwait	64	55	80	90	90
Malagasy	357	185	99	120	150
Malaysia	403	357	437	450	500
Mexico	16	0	168	200	100
Nigeria	666	711	450	500	500
Peru	58	101	48	5	0
Portugal	110	30	105	85	80
Saudi Arabia	471	491	530	550	550
Senegal	370	362	375	350	350
South Africa	146	158	186	170	190
Sri Lanka	217	157	20	165	150
Syria	102	120	130	130	130
U.A. Emirates	102	100	120	130	140
USSR	859	400	450	400	400
Viet Nam, Soc. Rep.	150	30	300	400	400
Other	2,875	2,811	3,585	3,615	3,605
World Trade	11,823	11,924	12,667	11,568	11,758

Source: Compiled from World Grain Situation, FAS.

Table 25.--U.S. rice exports by type 1/

Crop year	Regular milled	Brown	Parboiled	Rough	Brokens	Other	Total 2/
			1,000 metric tons				
1973	1,080.1	165.2	345.7	0.2	11.3	1.0	1,603.6
1974	1,388.3	546.5	242.5	.3	14.3	2.5	2,194.4
1975	777.3	535.8	406.0	.3	11.6	.9	1,731.8
1976	1,215.3	346.7	459.2	32.5	37.7	5.7	2,097.0
1977	1,275.8	232.7	502.5	132.5	87.1	39.4	2,270.2
1978	1,388.8	276.1	627.3	90.6	20.8	27.8	2,431.4
1979	1,461.9	475.4	598.4	54.5	40.1	75.5	2,705.9
1980	957.7	1,202.7	781.7	13.5	18.0	54.0	3,027.6
1981	941.8	502.6	1,000.9	18.7	5.9	39.1	2,681.9
1982	954.1	354.3	846.5	188.9	12.7	35.1	2,218.7
1983	882.4	334.3	821.8	105.0	37.6	89.8	2,270.9
1984	880.0	161.2	558.7	103.1	21.9	71.0	1,795.9

1/ All rice is reported on a milled-equivalent basis. 2/ Numbers may not add due to rounding.

Source: U.S. Bureau of the Census.

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WASHINGTON, D. C. 20005-4788